

Work Order ID 53255

October 29, 2009 8:20:28 AM

Page 1

Item ID: D212-664-207TRN

Revision ID: A

Item Name: Crosstube Turning Detail

Start Date: 29/10/2009 Start Qty: 1.00

Required Date: 02/11/2009 Req'd Qty: 1.00

Reference:

Approvals:

Process Plan:

Date: 09/10/29

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D212-664-247	Rev A								

100

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA706□2-Turn first side as per Folio FA706□3- File transition lines smooth.

110

0.00



QC

QC1- Inspect dimensions to dimension sheet

Memo

0.00

Quality Control

120

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA706□2- File transition lines smooth.□3- Remove sand and plugs

Accept

Setup Start

Stop

Cust Item ID:

Customer:

Run

Start

Stop

SA 09/11/08

SA 09/11/08



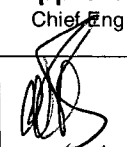

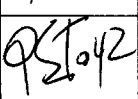

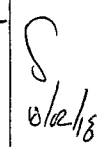
SA 09/11/08

SA / Pto →

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D 212-664-207 PAR #: Fault Category: Cross tubes NCR: (Yes) No DQA: 2 Date: 10.03.01
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: Date:

NCR: <u>53255</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9/11/18	#170	AFTER MACHINING it was found that the meas measurement of the tube are too small. (see last sheet) on one side only.	 10/02/18	→ Diameters are too small Taper under by over 0.020" Too much for both strength and fatigue. SCRAP UPON 10/2/18	 10-2-18	10/02/18	 10/02/18	 10/02/18
		RE: Machine malfunction. Trouble with x-axis not zeroing correctly.	 05/04/2				 05/04/2	 06/02/18

NOTE: Date & initial all entries

Work Order ID 53255

October 29, 2009 8:20:28 AM



Page 2

Item ID: D212-664-207TRN

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Turning Detail

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 QC Quality Control	QC1- Inspect dimensions to dimension sheet Memo	0.00 0.00	JA 02/11/09				1		
140 QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00							
150 HandFXtube Hand Finishing Crosstubes	Crosstubes Chemical Conversion Memo	0.00 0.00							

Work Order ID 53255

October 29, 2009 8:20:28 AM



Page 3

Item ID: D212-664-207TRN

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Turning Detail

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 	QC3- Inspect Part Finish	0.00							
QC Quality Control	Memo	0.00							
170 	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and stock in kanban rack <input type="checkbox"/> Location: _____								
180 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							

MF
10-2-18

Picklist Print

Page 1

October 29, 2009 8:20:33 AM

Work Order ID: 53255



Parent Item: D212-664-207TRNRevA



Parent Item Name: Crosstube Turning Detail

Start Date: 29/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6008-132RevA		Manufactured	No			110	Each	13.0000	1.0000			

Crosstube extrusion

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

13

50892

13


ALM 9-11-09


DART AEROSPACE LTD		Work Order:	53255
Description: Crosstube Assembly (205/212 Low Aft)		Part Number:	D212-664-247
Inspection Dwg: D212-664-247 Rev: A		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.438	+/-0.010	0.738	/			
	2.680	+0.005/-0.000	2.685	/			
	2.680	+0.005/-0.000	2.685	/			
	2.687	+0.005/-0.000	2.692	/			
	2.802	+0.005/-0.000	2.807	/			
	2.906	+0.005/-0.000	2.909	/			
	3.009	+0.005/-0.000	3.014	/			
	3.112	+0.005/-0.000	3.117	/			
	3.250	+0.005/-0.000	3.250	/			
SIDE B	0.438	+/-0.010	0.738	/	/		
	2.680	+0.005/-0.000	2.657	/	/		
	2.680	+0.005/-0.000	2.657	/	/		
	2.687	+0.005/-0.000	2.665	/	/		
	2.802	+0.005/-0.000	2.780	/	/		
	2.906	+0.005/-0.000	2.881	/	/		
	3.009	+0.005/-0.000	2.989	/	/		
	3.112	+0.005/-0.000	3.116	/	/		
	3.250	+0.005/-0.000	3.250	/	/		
	128.27	+/-0.030	128.28	/			

Measured by:		Audited by:		Prototype Approval:	N/A
Date:	08/11/08	Date:		Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-207)	KJ/EC	

6008-132

128.52

PARTS LIST:

Qty	Part Number	Description
X	D212-664-247	CROSSTUBE ASSEMBLY (205/212 LOW AFT)
1	D6008-132	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
2	D3660-1	CUFF
4	MS21920-28	CLAMP (OR MS21920-30)
44	CR3212-4-06	RIVET (OR M7885/3-4-06)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.27±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A
VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1
THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE
D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY
AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A
LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN
CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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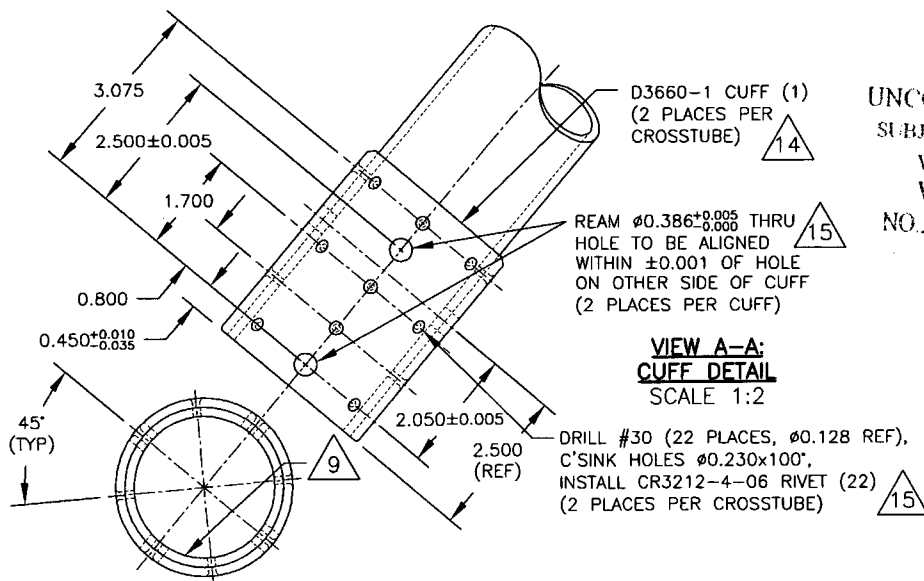
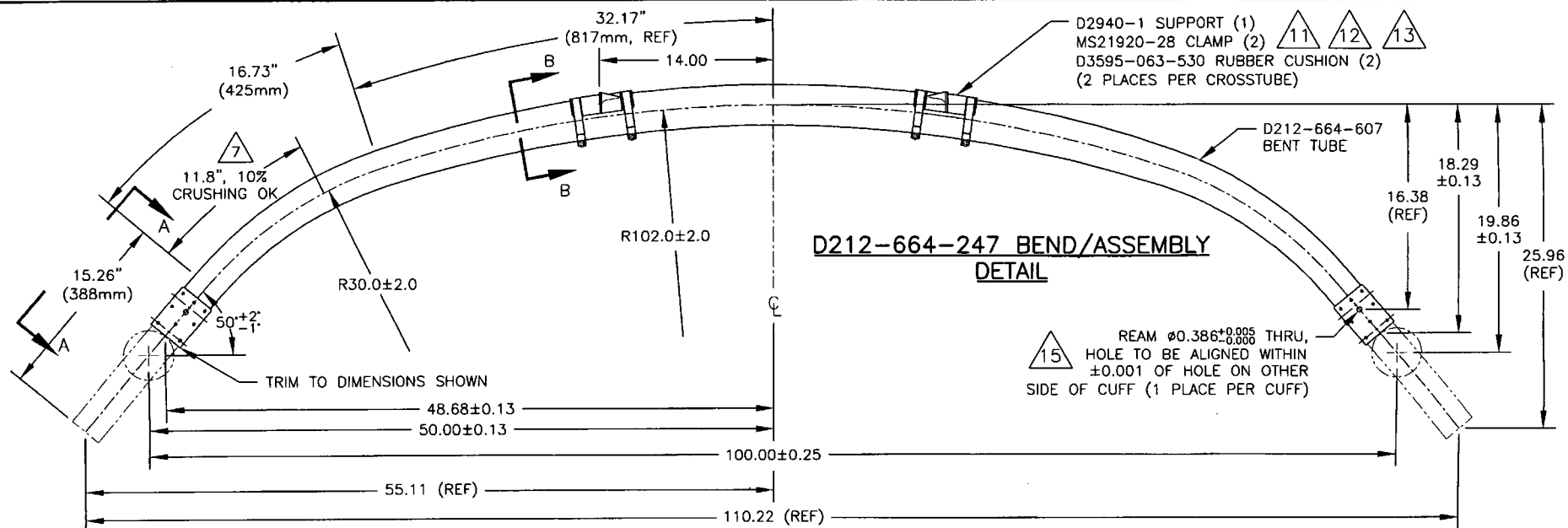
WORK ORDER...

33255
09-10-29

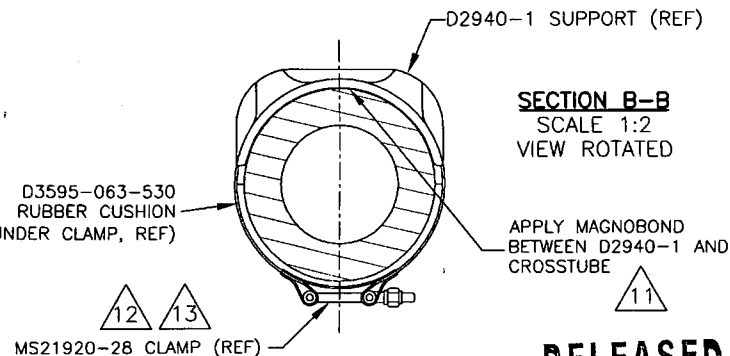
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A		07.07.07	NEW ISSUE
DESIGN	92	DRAWN BY	92
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DATE		07.07.07	
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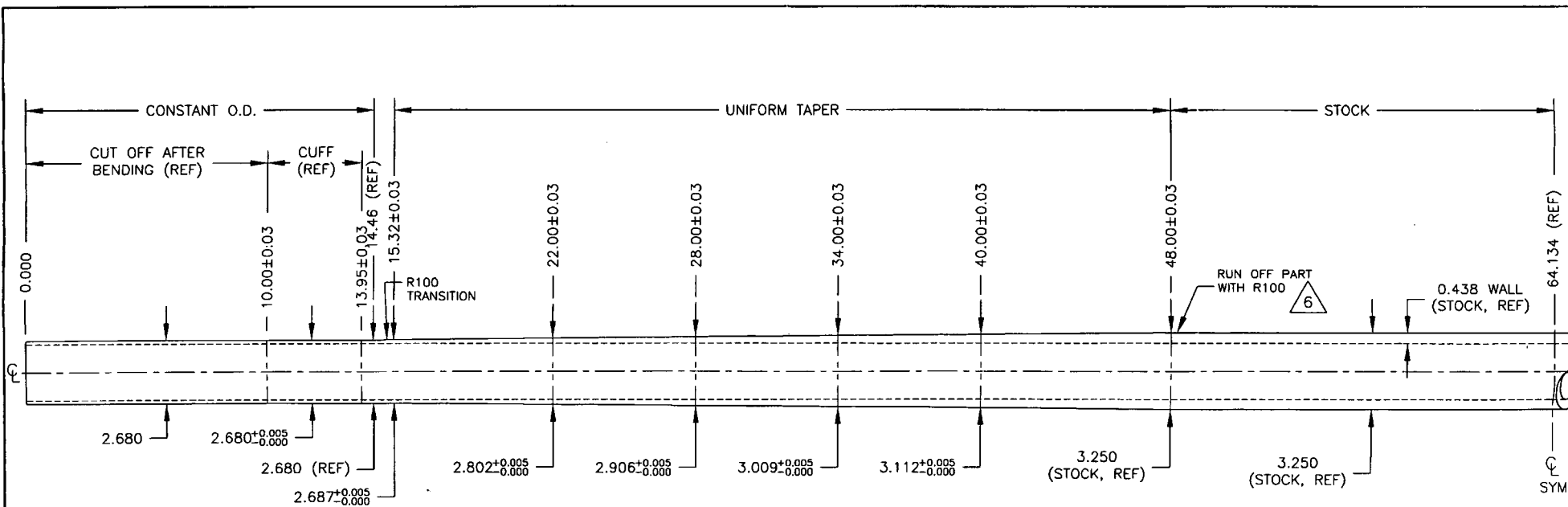


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CHECKED	RA	APPROVED	CH	DRAWING NO.	REV. A
DATE	07.07.07	TITLE	CROSSTUBE (205/212 LOW AFT)	D212-664-247	SHEET 2 OF 3
		SCALE	1:8		



D212-664-247 MACHINING DETAIL

RELEASED
07.07.07

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DATE		07.07.07		DRAWING NO.	REV. A
				D212-664-247	SHEET 3 OF 3
				TITLE	SCALE
				CROSSTUBE (205/212 LOW AFT)	1:4

DRAWING NO. D212-664-247	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-247-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>PR</i>	MFG. APPR. <i>LA</i>	APPROVED <i>AMP</i>		DE APPR. <i>MP</i>		
DATE 09.05.01	DATE 09.06.15	DATE 09/06/22	DATE 09/06/22		DATE 09.06.22		

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-247B	CROSSTUBE ASSEMBLY (214 LOW AFT)

THE D212-664-247B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-247 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-247 CROSSTUBE.

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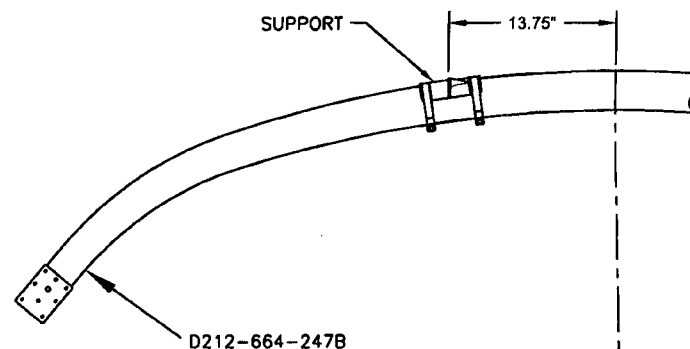


FIGURE 1 - SUPPORT INSTALLATION